Microsoft

.net developer training

Create XML Web Services and Applications with Visual Studio .NET

Building ASP®.NET Applications

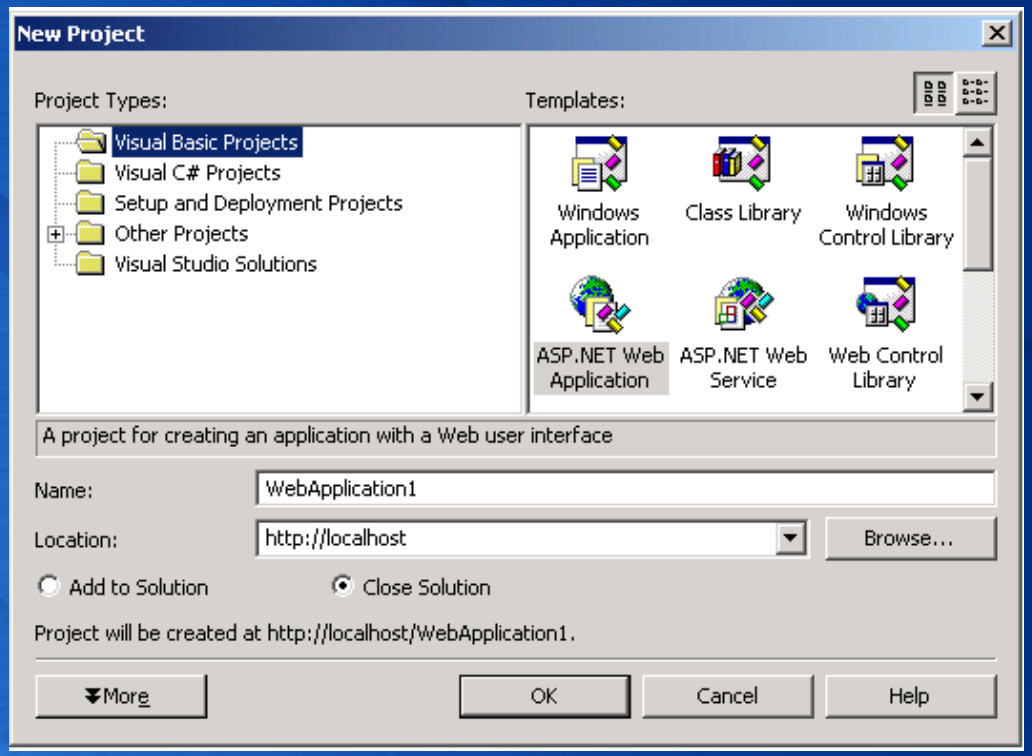
Module 04 Agenda

- Introduction
- ASP.NET
  - Platform
  - Page development
  - Application services
  - Run time

Introduction
Active Server Pages .NET

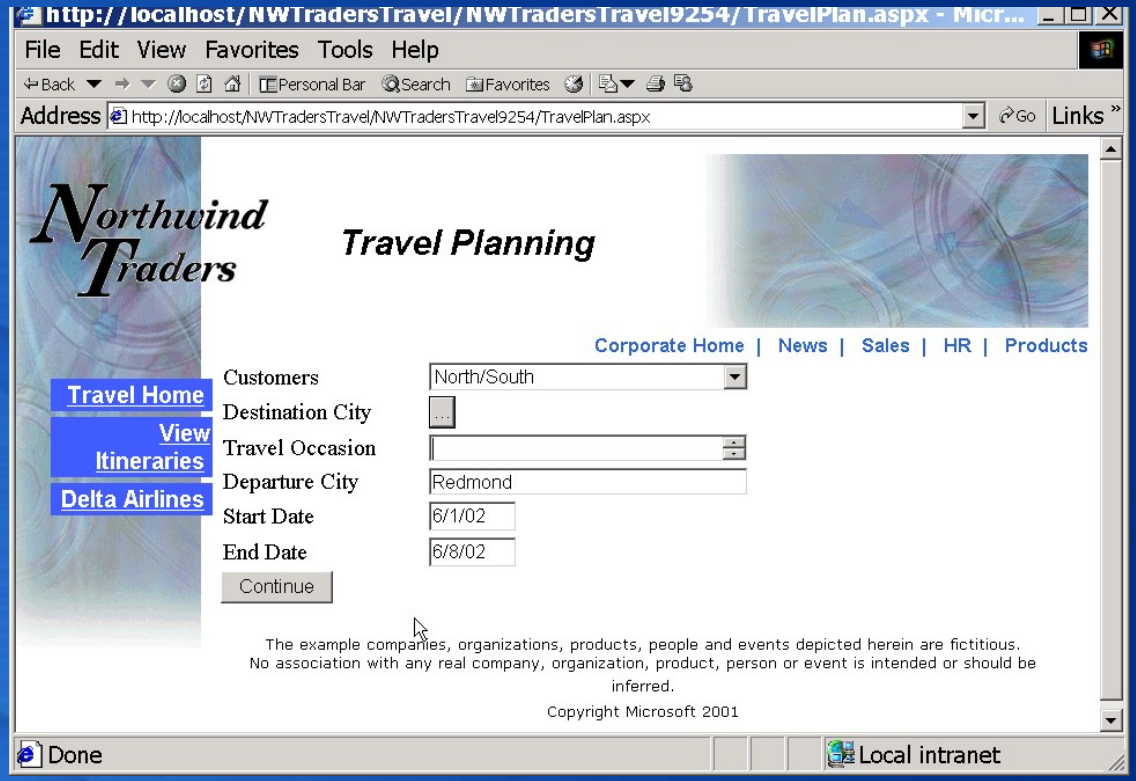
ASP.NET and Visual Studio® .NET are designed for Web Applications

- Designed for Web Applications and XML Web services
- Drag and drop for controls and HTML features
- Rich language integration



Introduction
ASP.NET

- Builds on the programming classes of the .NET Framework
- Controls and infrastructure simplify the building of Web Applications



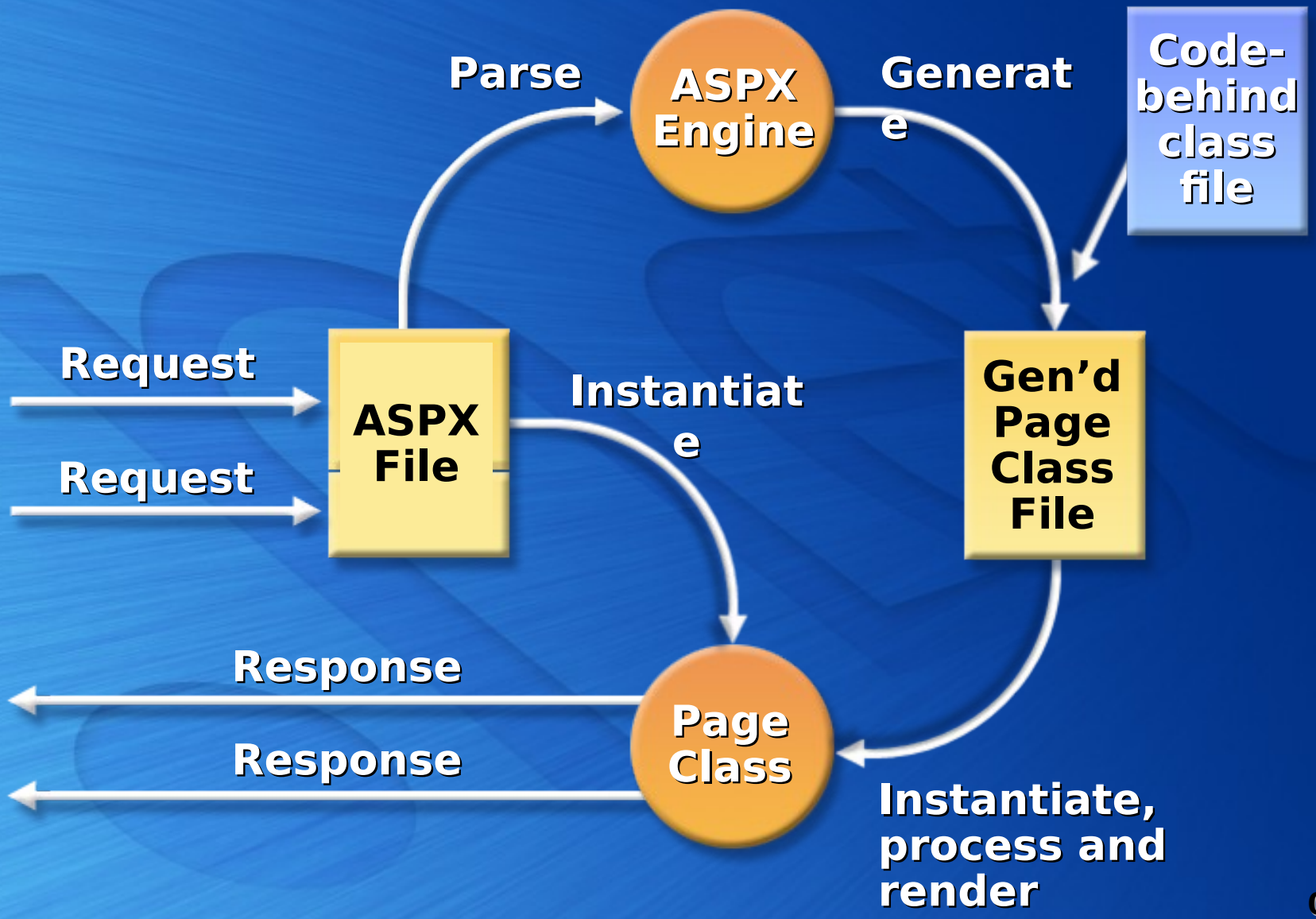
Page Development Topics

- Separation of Code from Content
- Dynamic Compilation
- Server Controls
- Validation
- Custom Controls
- Page Event Life Cycle

Page Development
Separation of Code from Content

- Developers and designers can work independently

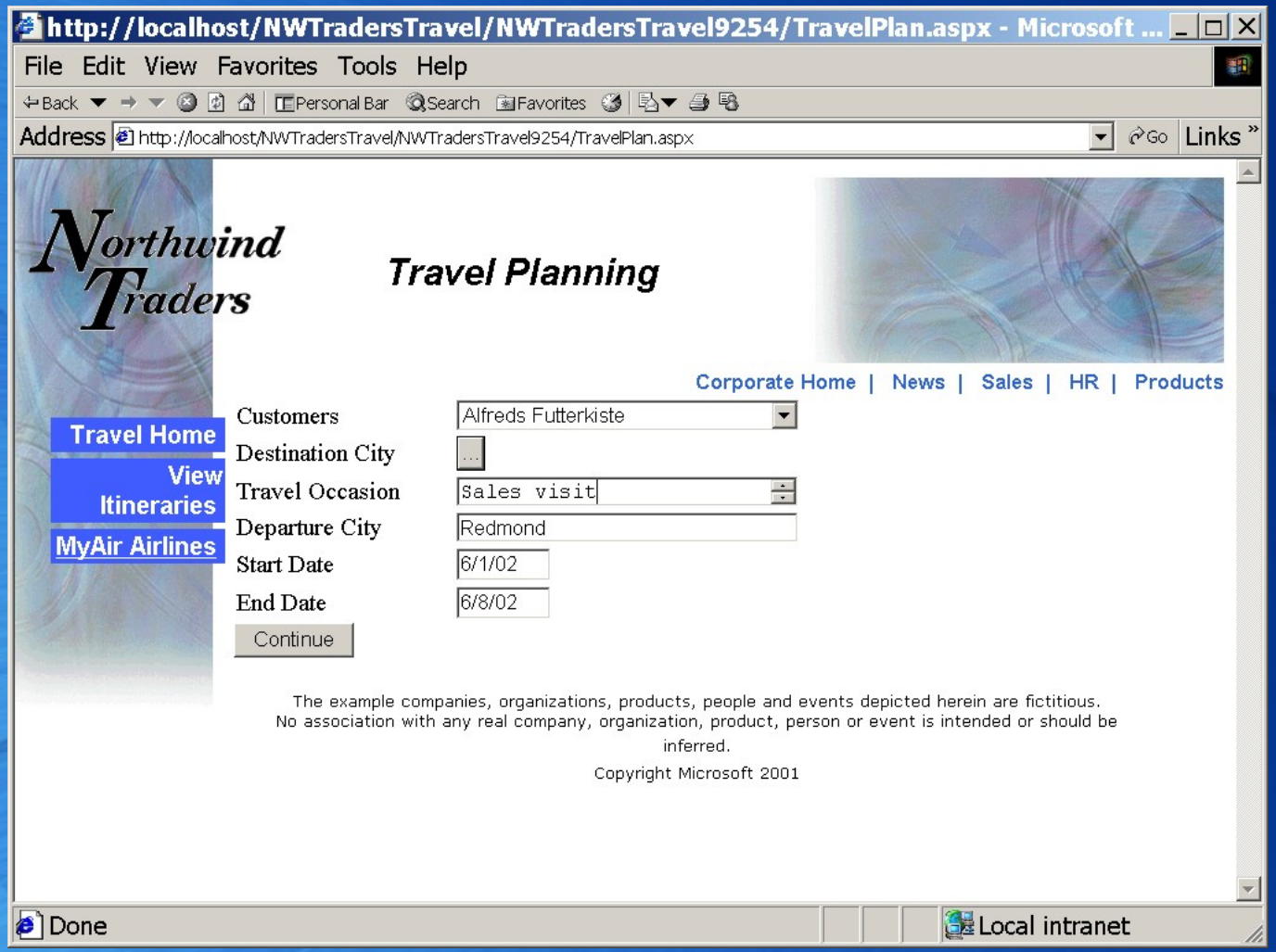
Page Development
Dynamic Compilation



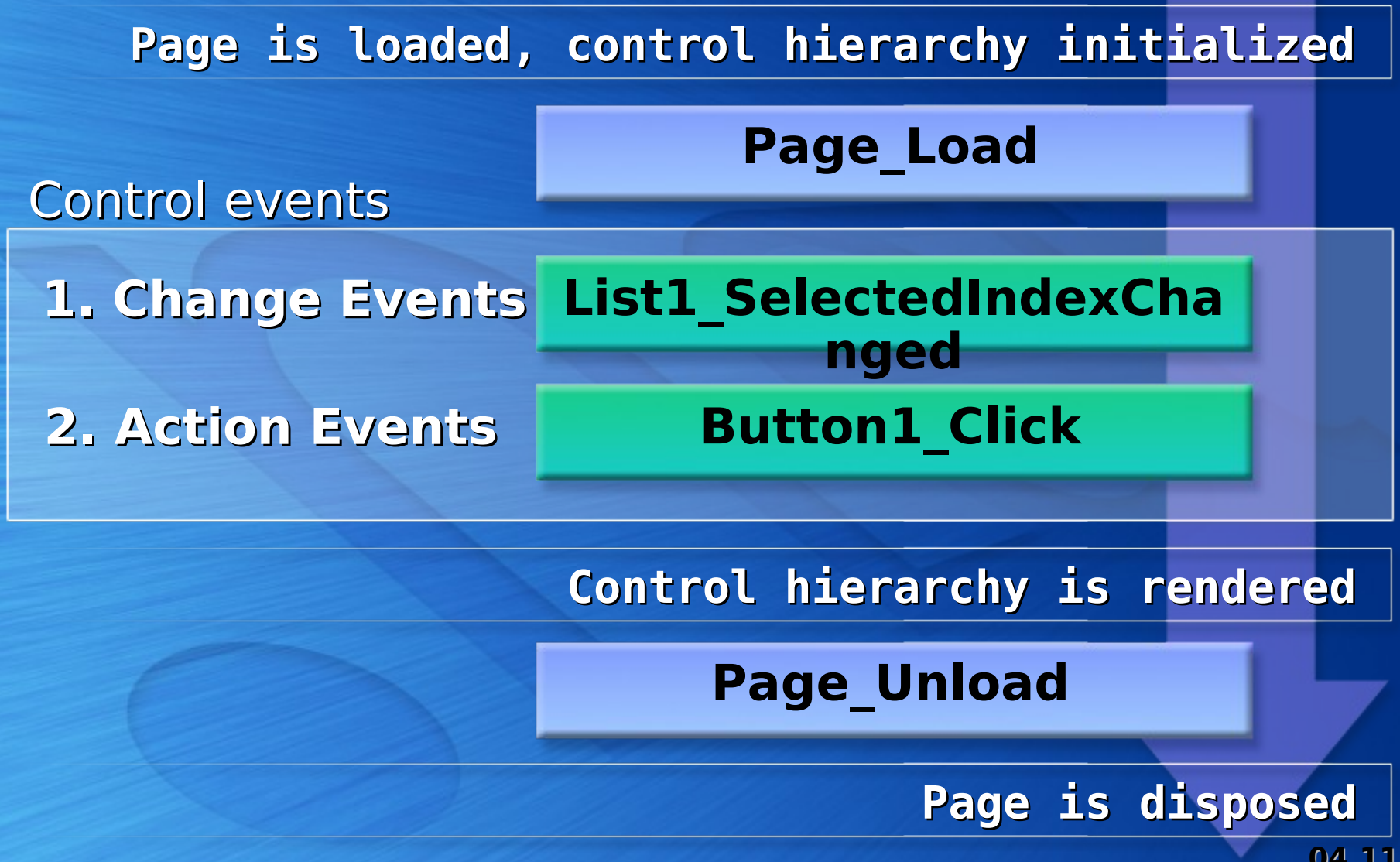
Page Development
Server Controls

- Server-programmable objects
  - Properties, method and events
- Encapsulate behavior
- Browser-neutral - Can render differently to support multiple browsers or other Web clients
- You can create custom server controls

Page Development
Server Controls

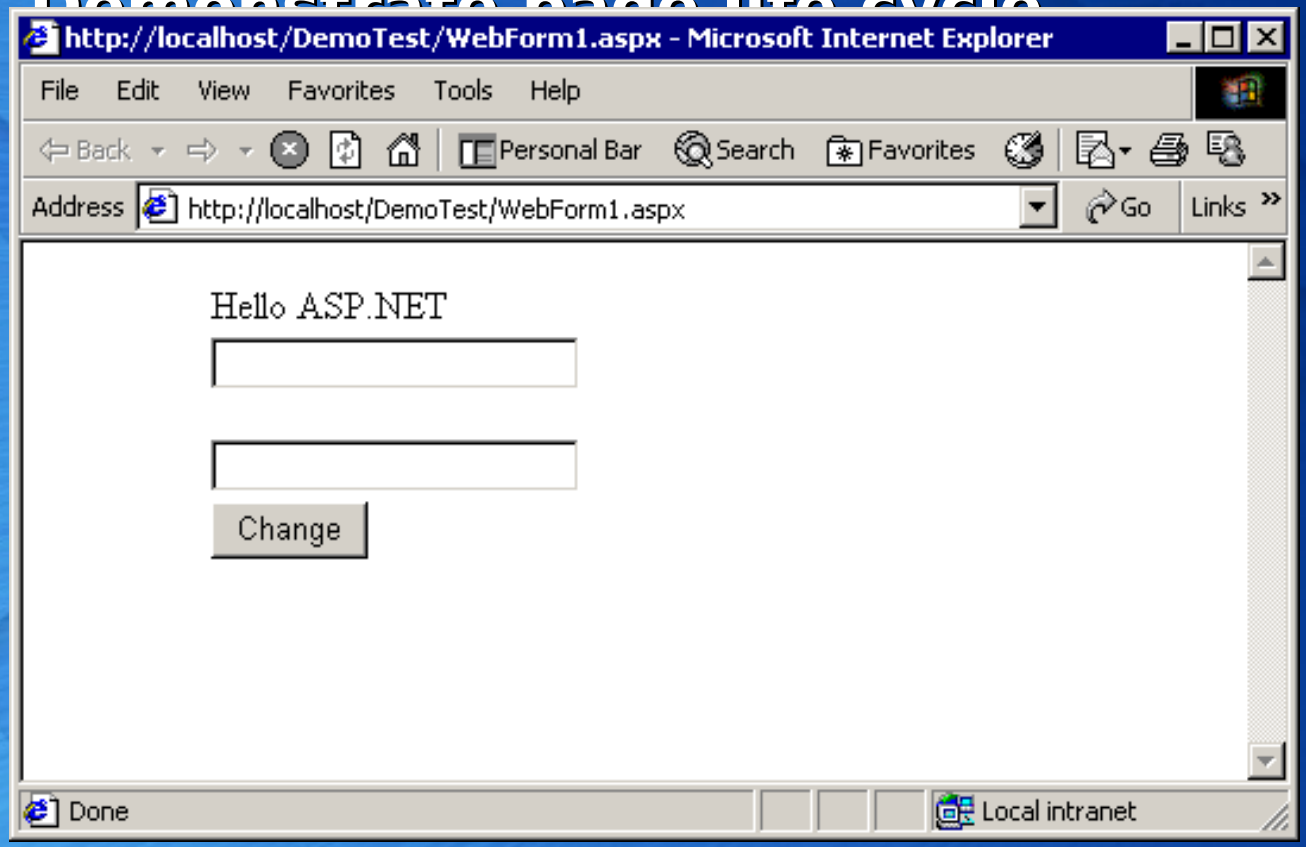


Page Development
Page Event Life Cycle



Page Development
Demo

- Show simple Web Form with server controls
  - Demonstrate page life cycle

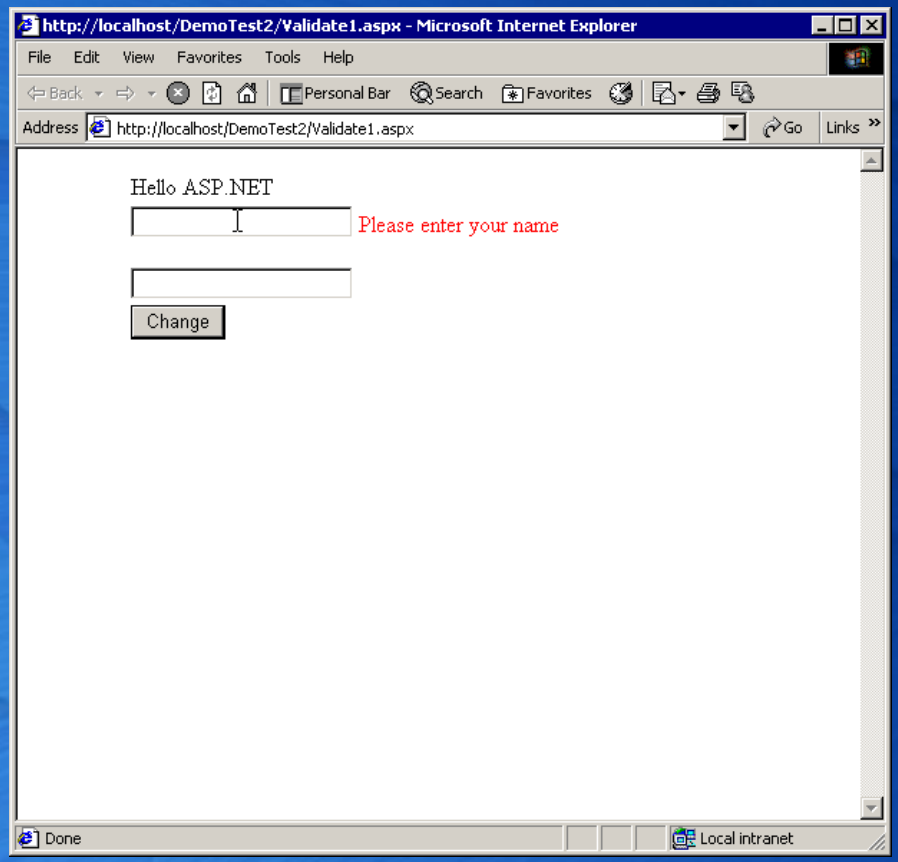


Page Development
Input Validation

- Rich and declarative Validation
- Validation controls declared separately for input controls
- Extensible Validation Framework
- Supports Validation on client and server
  - Avoids round trips for up-level clients

Page Development
Input Validation Demo

- **Validation Controls**
  - **Demo of Validation Control**



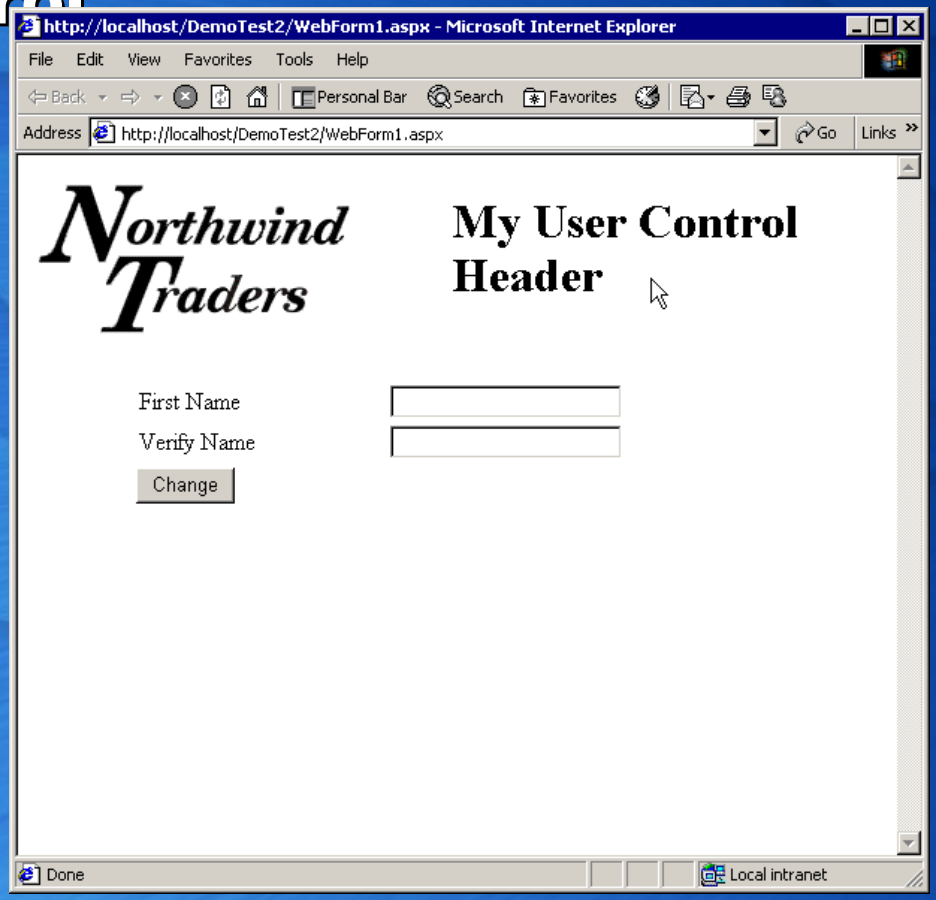
Click to view HTML Code

Page Development
Custom User Controls

- Simple way for page developers to author controls
- Enables full encapsulation
  - Supports nested controls
  - Separate code namespace
  - Separate code language
- Partition work across multiple developers
- Reuse work across multiple pages and applications

Page Development
User Controls Demo

- **User Controls**
  - **Show creation and use of simple User Control**



Application Services

- Request processing
- Caching
- Security
- Session state

Application Services
Request Processing

- Pluggable, modular architecture
- Built-in services for:
  - Caching
  - Security authentication/authorization
  - Session state

Application Services
Caching

- Output caching
  - Serves rendered result of a page or partial page from cache
  - Big performance win: cached pages are as fast as static pages
  - Vary by params, language and user-agent
- Cache API
  - Enables arbitrary objects to be cached
    - Example: Result of database query
  - Can be a performance win
- User Control caching
- Scoped to application

Application Services
Security

- Extensible security architecture
  - Pluggable authentication and authorization
  - Any credential store (e.g., Database)
- Out of box authentication support
  - Basic, Digest and NTLM
  - Forms-based authentication
  - Microsoft Passport authentication
- Extensible authorization support
  - Includes new Role-based Security architecture
- More details in the Security module

Application Services
Session State

- States can be managed within application using
  - HttpContext
  - Session Object
- Session state can be external from ASP.NET process
  - ASPState: NT Service
  - SQL Server™ 7.0/2000 temporary database
- Big reliability wins
  - Session state survives crashes/restarts
- Enables Web farm deployment
  - Session state can be shared across a Web farm of ASP.NET servers
  - Applications are no longer tied to one machine

Application Services
Session State Demo

- **Session state**
  - **Show using session state in the application**
- **Explain View state management**

ASP.NET Runtime Topics

- Improved Reliability
- Improved Deployment

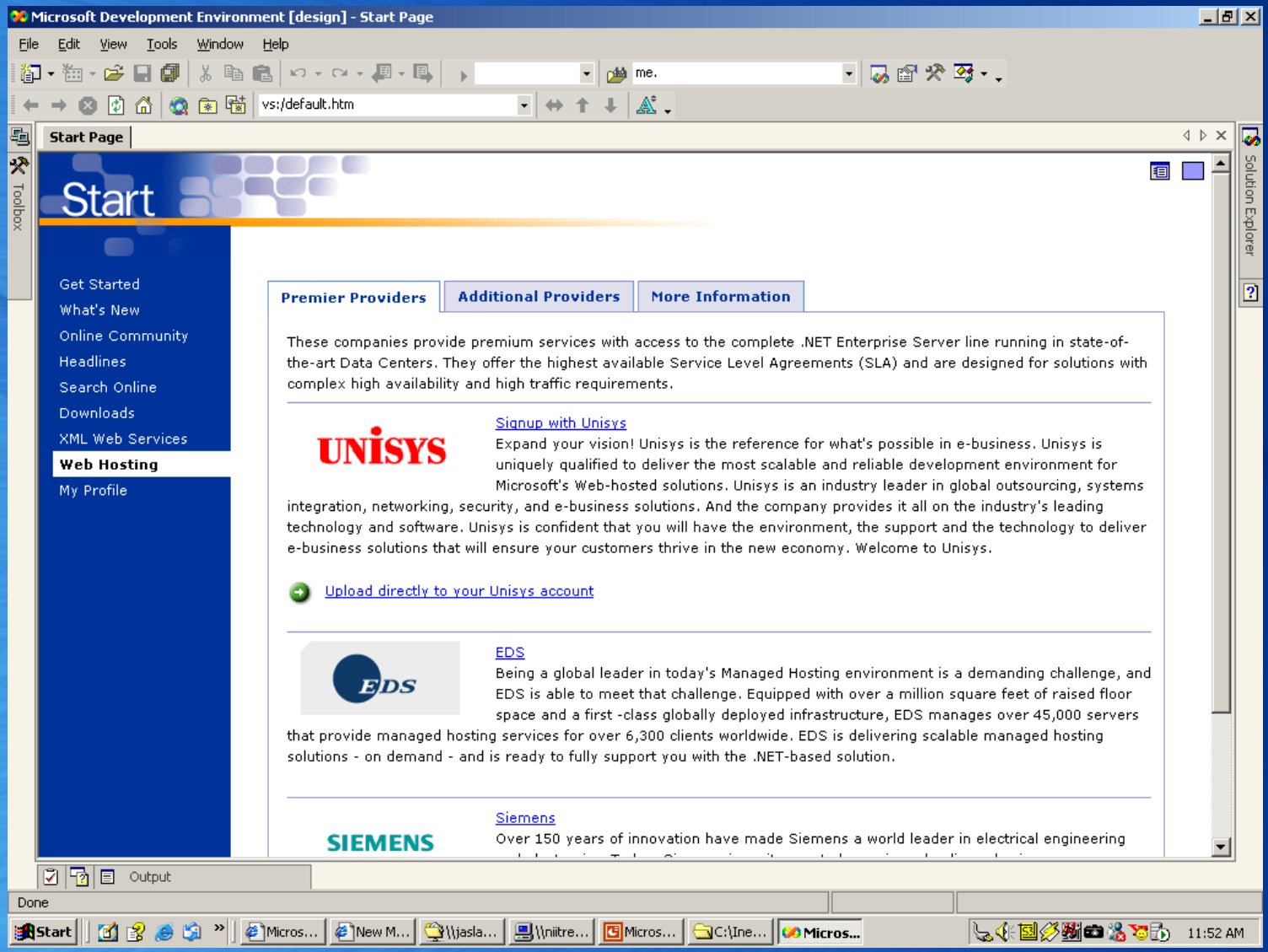
ASP.NET Runtime
Improved Reliability

- ASP.NET has been designed with the assumption that failures will occur on systems
  - Designing for failure-reduced fragility
- Detects/recovers from common problems
  - Access violations, memory leaks and deadlocks
- Pre-emptive cycling of applications
  - Time and request-based settings
- ASP.NET is designed to make applications highly available with almost no downtime

ASP.NET Runtime
Improved Deployment

- Components can be dynamically updated
  - No more locked DLLs
  - Just copy a new DLL on top of an old one
- No tools, no configuration changes, no application shutdown and no re-boots
- Works great with Content Replication Systems

ASP.NET Runtime
Improved Deployment


Microsoft Development Environment [design] - Start Page
File Edit View Tools Window Help
vs:/default.htm
Start Page
Toolbox
Solution Explorer
Start
Get Started
What's New
Online Community
Headlines
Search Online
Downloads
XML Web Services
Web Hosting
My Profile
Premier Providers
Additional Providers
More Information
These companies provide premium services with access to the complete .NET Enterprise Server line running in state-of-the-art Data Centers. They offer the highest available Service Level Agreements (SLA) and are designed for solutions with complex high availability and high traffic requirements.
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SIEMENS
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Over 150 years of innovation have made Siemens a world leader in electrical engineering
Output
Done
Start
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Summary

- ASP.NET simplifies Web Application development
- Scalable, better performing applications
- Makes developers more productive
- Makes systems more reliable
- Makes systems easier to deploy

Resources

- *The ASP.NET home page* - A good starting place for ASP.NET basics
  http://msdn.microsoft.com/net/aspnet/default.asp
- *A solid introduction to ASP.NET* - This article covers the basics of Web Forms, Web Services, State Management, Security and other areas
  http://msdn.microsoft.com/library/dotnet/cpguide/cpconintroductiontoasp.htm
- *The ASP.NET architecture* - A quick overview of the set up of ASP.NET
  http://msdn.microsoft.com/library/dotnet/cpguide/cpconaspnetarchitecture.htm

Resources

- ***Five steps to getting started with ASP.NET*** **- An article to get you started**
  http://msdn.microsoft.com/library/welcome/dsmsdn/asp11122000.htm
- ***Web Forms processing*** **- An explanation of how Web Forms work**
  http://msdn.microsoft.com/library/dotnet/cpguide/cpconwebformspageprocessing.htm
- ***Creating Web Forms event-handling methods using ASP.NET*** **- A basic how-to for creating event-driven methods in ASP.NET**
  http://msdn.microsoft.com/library/dotnet/cpguide/cpconcreatingwebformsevent-handlingmethodsusingaspsyntax.htm

In-Depth Training On ASP.NET
Direct from Microsoft

- 2063B: Introduction to ASP.NET (Visual Studio .NET Beta 2)
- 2063C: Introduction to ASP.NET
  - Available Feb 2002
- 2310A: Developing Web Applications Using Microsoft Visual Studio .NET
  - Available in May 2002

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